

CLAIMS

1. A method of despreading a multicode signal that has been generated using two or more spreading codes with different spreading factors, comprising:
 - subjecting the signal to a first despreading step that includes a first Fast Hadamard Transform (FHT) to jointly despread the spreading codes, wherein during the first despreading step despreading is performed by a factor lower than or equal to the lowest spreading factor so that one or more spreading codes are despread only partially; and
 - subjecting the signal or a signal portion including one or more partially despread spreading codes to one or more further despreading steps.
2. The method of claim 1, wherein the despreading steps are performed in a cascaded manner.
3. The method of claim 1 or 2, wherein the dimension of the first FHT is correlated with the lowest spreading factor.
4. The method of one of claims 1 to 3, wherein the first despreading step further includes a permutation operation.
5. The method of one of claims 1 to 4, wherein one or more of the despreading steps include a serial-to-parallel conversion.
6. The method of one of claims 1 to 5, wherein the one or more further despreading steps include at least one of a switching operation, a decimating operation, a summation operation, a further FHT, and a multiplication operation.
7. The method of step 6, wherein the decimating operation includes a switching step for distributing a sequence of input samples according to a predefined distribution scheme over two or more signal branches.
8. The method of claim 7, wherein in each signal branch a summation operation is performed and the outputs of the summation operations are used as input for a second FHT.

9. The method of one of claims 1 to 8, wherein the one or more further de-spreading steps include a multiplication operation that is followed by a summation operation.

5 10. The method of one of claims 1 to 9, wherein the one or more further de-spreading steps include a second FHT that is followed by a summation operation in every output path of the second FHT.

10 11. The method of one of claims 1 to 10, wherein at least the first FHT is configured as a FHT with reduced operations.

12. A despreading component (38) for despreading a multicode signal that has been generated using two or more spreading codes with different spreading factors, comprising:

- 15 - a first despreading stage (40) for performing a first despreading step that includes a first Fast Hadamard Transform (FHT) to jointly despread the spreading codes, wherein during the first despreading step despreading is performed by a factor lower than or equal to the lowest spreading factor so that one or more spreading codes are despread only partially; and
- 20 - at least a second despreading stage (42) for performing one or more further despreading steps with respect to the signal or a signal portion that includes one or more partially despread spreading codes.

25 13. A receiver for wireless communications including the despreading component (38) of claim 12 .